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ABSTRACT

This booklet describes a project involving the planning and construction of an outdoor play area for a child day care center in Harrisonburg, Virginia. Participants in the project sought to increase community awareness of the value of outdoor activity and to construct an outdoor learning area which would incorporate provisions for a variety of children's learning needs. The guide includes a copy of the final plan, a list of basic criteria for playground areas, a discussion of topics related to the implementation of the plan, and tips for teaching in the outdoor learning area. Play area and play unit designs, construction guides, and a list of selected resources are appended. (RH)

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# Developing The Outdoor Learning Center

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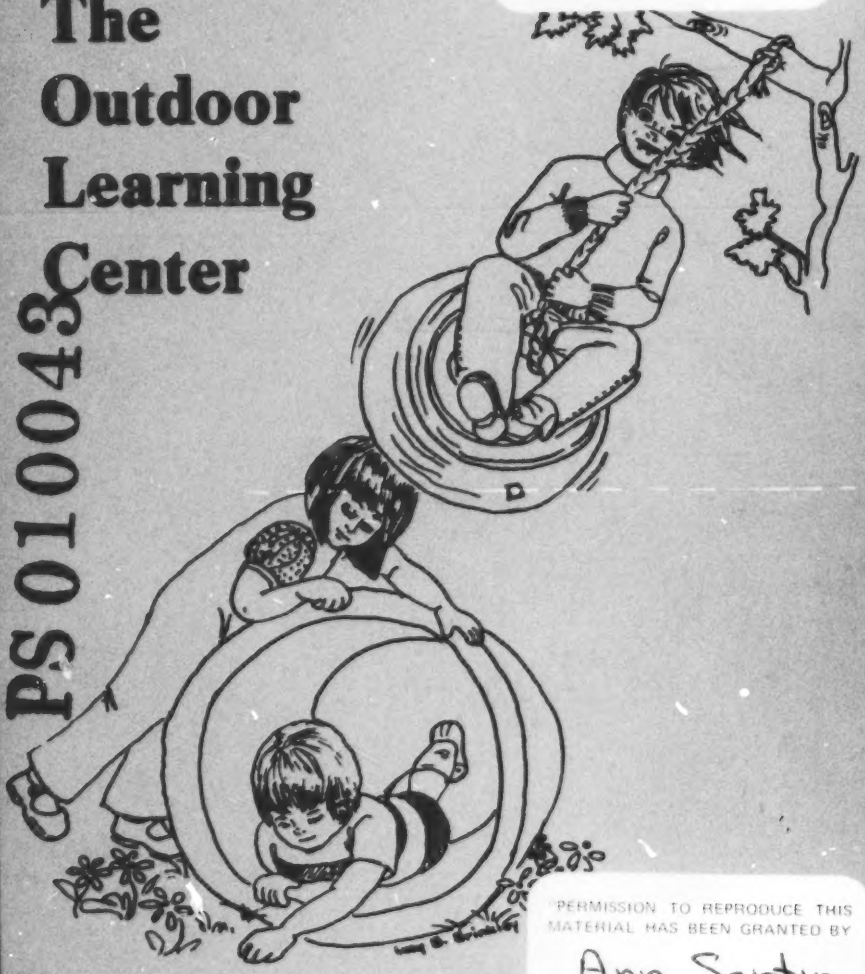

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# Developing The Outdoor Learning Center

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# Preface

Children organize their neurological systems through movement and develop intellect through play. Perceptions develop into concepts as children experience their own bodies in relationship to objects, as they handle materials, and as they accompany action with language.

The young child's outdoor life should be as rich in learning opportunities as is his experience in the indoor learning area. The outdoors is his classroom for a fifth or more of the time he spends in a school or center.

Examples of outdoor areas which reflect such a philosophy of outdoor play and learning are relatively rare. Most playgrounds have limited value for children's learning and growing. Children quickly exhaust the possibilities provided by the traditional swings, slides, see-saws, merry-go-rounds, modern molded and sculptured forms, and many of the "cute" designs adults dream up for children.

On many playgrounds, however, even the traditional pieces have been omitted or are removed because of fear of accidents. Children are left to their own devices—to running about, chasing each other, or wandering aimlessly. We know from research that asocial play and physical aggression increase when play possibilities are limited. We also know that young children spend up to 98 % of their waking time with materials. It is a fundamental need of these children to be busy and moving. Appropriate materials with which to interact are essential to them.

A child care program or a school designed to meet young children's needs must, therefore, include an outdoor learning area that is an extension and enrichment of the total learning environment. To do this, there must be an awareness of the potential in outdoor play. There must be a commitment to collecting and caring for appropriate equipment, the tools for children's learning. There must also be active teacher and staff involvement in providing and supervising rich experience.

It was with the hope that teachers might come to better recognize and honor children's needs for quality outdoor experiences that a workshop in planning and developing an outdoor learning area was carried out as a part of a Program Impact project, "Child Day Care Development in the Shenandoah Region."

This publication is a report of the workshop experience and its results. It is offered to other centers and groups as a resource.

We are grateful to Donald Mitchell for his helpful advice and encouragement in the initial stages of this project and for his continuous support of it; to Rachel Fesmire who served as our able educational consultant; to Dwight Miller, the architect who gave unstintingly of his time and interest.

We are also deeply indebted to the Harrisonburg Kiwanis Club, to the members of the Board of the Harrisonburg-Rockingham County Child Day Care Centers, and to the individuals who participated in the various phases of the workshop for their enthusiastic contributions. We truly learned from each other.

Mildred Dickerson

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# The Outdoor Learning Center Project

The project had a dual purpose: (1) to provide an educational experience in understanding both the value of children's outdoor play and the environmental aspects essential to its effective implementation; and (2) to construct a play area which would serve as a learning experience for the participants and as a demonstration of an outdoor learning center that could be developed by volunteers.

## Procedure

### Steering Committee Established

Representatives from parents, staff, board members and other interested groups participated on the committee. This group assumed the responsibility for planning the total effort and for involving participants in the project. It was responsible for committee appointments and for major decisions.

### Coordinator Named

The coordinator held the position as grant project director. She functioned in a coordinating role, delegated authority and responsibility, prepared mailings, and maintained financial records. This role required a major commitment of time and energy.

### Assistance Acquired

The board of the center involved approved the project and participated fully in its implementation.

The Kiwanis Club of Harrisonburg, Virginia, pledged financial support, the help of members with the project, and their continued involvement in it.

Without the assistance of these groups the project would not have been possible.

### Resource Personnel Selected

For this project an educational consultant and an architect were involved. Both provided services for token honoraria. In such a project, there is a necessity for expert knowledge of children's needs and about playground criteria. While this information can be obtained from the literature, a consultant brings experience and perspective. In a volunteer project, it is particularly essential that there be a supervisor who is familiar with regulations, who knows the construction technicalities involved, and who can direct the overall work. If such help is not available on a volunteer basis, its cost should be included in the budget.

### Participants Involved

Invitations were extended to the day care center staff, board, and parents and to representatives of all centers in the area. Response was gratifying. More than 40 attended the orientation session, and 40 to 50 persons participated in each of the two large group work sessions.

# Workshop Activities

## Orientation Session

**Objectives For The Day**

1. To increase awareness of the value of outdoor activity and to develop the concept of the outside area as an extension of the indoor learning center.
2. To establish criteria for an effective outdoor learning area.
3. To design a specific playground which would incorporate provisions for a variety of children's learning needs and meet the established criteria.

**Orientation Activities**

The film, "Outdoor Play . . . A Motivating Force for Learning," and follow-up discussion guided the group's examination of the kinds of learnings to be achieved in outdoor areas.

Criteria for play spaces were developed through lecture and discussion.

A visit to the proposed play area helped participants become familiar with the size, assets, limitations, and possibilities of the area. Participants needed first-hand experience on which to base their knowledge—just as children do.

A slide-tape presentation, "Inexpensive Additions to Outdoor Play Equipment," extended thinking to include imaginative and innovative materials and equipment.

Subgroups worked over the problem of translating their ideas onto scale drawings of the space.

Each subgroup selected two representatives to the steering committee which would integrate the ideas from the work groups into a final plan. This committee's first meeting was scheduled two days after the orientation session.

A short film showing a community working to develop a play area left participants inspired to begin the task.

## Committee Planning

The steering committee, now enlarged to include the subgroup representatives, met for four hours. It viewed additional slides to review and extend ideas, developed final plans, and evaluated them against the established criteria.

The final plan (Appendix A) for the area was plotted.

Priorities were established for:

1. Extension of available space. This was necessary so that permanent equipment could be erected without violating concerns of the church for the appearance of the area nearest the building. The open space near the building would be available for portable equipment and for activities that would not require equipment. This arrangement had the disadvantage of locating the equipped area at a greater distance from the classrooms than was desirable. Compromises have to be made to adapt to what is possible.
2. Fencing the newly acquired area and replacing some temporary fence.
3. Building a storage house and sheltered area (Appendix B). Previously, all outdoor equipment had to be moved through church halls to the outdoors. The storage-shelter would be placed near the equipped area and would be designed so that it could be moved if the center's location should be changed.
4. Development of a wheel toy path that would also serve as an access walkway to the active play area.
5. Construction of a multi-purpose climbing structure. The architect designed the 8 x 8 foot climbing structure (Appendix C) to include two levels from which children could look down on their world, a triple slide, a fireman's pole and climbing ropes. The area beneath the platform would provide a shaded play space. Hooks would make it possible to suspend a punching bag, pulleys, swinging tires and other equipment in the ground level area. Investigation showed that the cost of materials would make it impossible to build the higher platform level during the initial stage. However, plans were adapted and the frame and supports of pressure-treated lumber were installed so that the upper level could be added when funds became available.
6. Moving of swings and large jungle gym (the center's only permanent equipment) to locations that would fit into the overall plan and make them more easily supervised.
7. Development of a sand area.
8. Acquisition, placement and finishing (Appendix E) of concrete structures for dramatic play and motor development.
9. Construction of portable equipment (Appendix D) for jumping, walking, balancing, see-sawing, and water play.
10. Construction of a sturdy support frame for suspending hanging equipment.
11. Preparation of discarded tires and wire cable spools for a variety of uses.

Materials needed were identified and responsibilities of preparing for the workshop sessions were assigned.

**Materials Solicited**

The most expensive items were donated. Responsibility for seeking donations was assumed by the board chairman and the coordinator. Prior to the workshop day the following had been acquired:

1. Donation by the city recreation department of extra land adjoining the property.
2. Fencing of the additional area—the contribution by a member of the church in which the center is housed.
3. Two concrete sewer conduits and two sections of concrete manhole liner. These were damaged items, specifically selected from the companies' lots for their shape and openings, and delivered to the playground area by the two companies which made the donations.
4. Two dozen tires, assorted sizes.
5. Three wire cable spools.
6. Commitment from the Kiwanis Club of
   a. up to $1500 for materials to construct a storage house and shelter and for such additional use as needed.
   b. their members' labor to construct the building and assist in the project.
7. Use of pick-up truck.

**Materials Procured**

Building materials lists were compiled and materials ordered by the architect and coordinator. The concrete foundation for the storage shelter was poured and all materials were delivered before work began.

It was a disappointment to find that used utility poles and railroad ties recommended in many resources were not available in our community. These might have been obtained if a longer period of preplanning had been possible.

**Tools Located**

Tools, as well as materials, are necessary in the right place at the right time, or valuable time is wasted. To provide for this, the steering committee listed the tools which would be needed. Responsibility for obtaining the less common tools was assigned. In addition, each participant indicated on a registration and planning sheet the tools, plainly marked for identification, he or she would bring.

| **Tools rented:** | **Tools purchased:** |
|---|---|
| disc sander | three masonry brushes |
| rotary sander | |
| bobcat (small earthmover) with operator | |

**Tools loaned:**

| | | |
|---|---|---|
| shovels | hammers | electric saw |
| mattocks | handsaws | paint brushes |
| picks | braces & bits | electric drill |
| hoes | c-clamps | post hole digger |
| rakes | measuring tapes and rules | dishpans |
| wheel barrows | level | trowels |
| extension cords | framing square | crescent wrenches |
| Carborundum stones | | ladders |

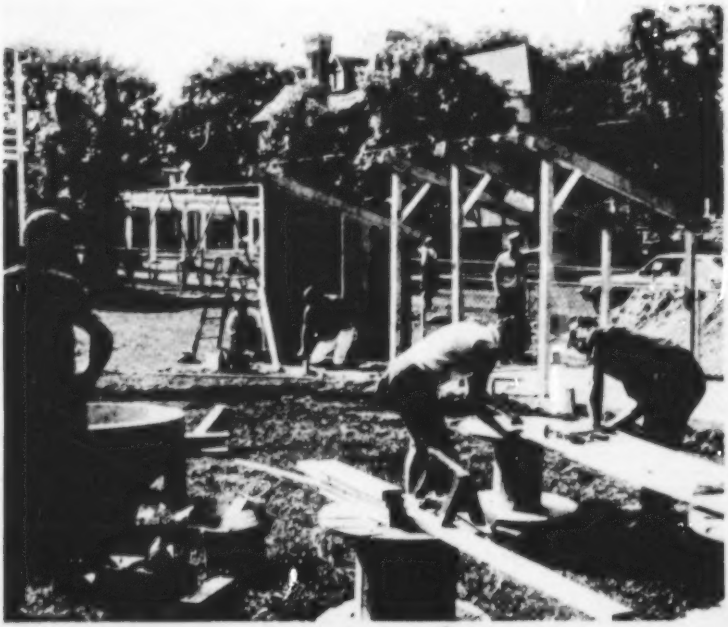
**Work Plans Developed**

Careful preparations were made to insure that the workshop days would be learning sessions.

The coordinator obtained from workshop participants lists of the tasks each knew how to do and was interested in learning to do. Directions for construction of wooden items and for finishing concrete pieces were prepared. Centers for each type of work were arranged with materials and tools that would be needed.

The architect and two steering committee members established the order for construction activities. They also planned for directing the building of the storage-shelter and the climber.

All preparations provided for self-selection, self-direction, experience and discovery learning. It was also planned that individuals with skills would help the learners.



## Work Sessions

Two sessions were scheduled: 3:30 to 8:00 p.m. Friday and 9:00 a.m. to 3:00 p.m. Saturday.

During this time we were able to achieve:

- Clearing of brush and weeds
- Laying out, digging, and filling with gravel of wheel toy path ready to be paved commercially the following week
- Erection of storage house and shelter on previously poured concrete base
- Placement of concrete items; their smoothing, patching, preparation and painting (painting should have been delayed—we were over-eager)
- Removal and resetting of swings and jungle gym
- Digging holes, setting poles, beginning framing of climber
- Construction and painting of a water play table, three cleated walking boards, five sawhorses, and a jumping board
- Preparation of tires for a variety of swinging and climbing activities
- Sanding and painting of cable spools
- Smoothing and partial sodding of new area
- Spading a digging area
- Excavating, framing and filling a large sand area

### Drop-Ins

We were surprised by the number of people who stopped by to see what was happening. A member of the committee needs to be aware of these visitors and available to interpret the project for them. Several went home, changed clothes, and returned to help!

**Refreshments**

Refreshments are essential to a project and should be provided on site. A committee provided an inexhaustible supply of coffee, iced tea and lemonade. Because funds for other food were not available, individuals were asked to bring their meals. The meal breaks were especially valuable for getting better acquainted and for sharing each day's experiences, achievements, and satisfactions.

**Public Information**

Newspaper, radio and television coverage of the workshop was excellent. It informed the community about the needs of children, highlighted the center, and gave attention and appreciation to the efforts and donations of individuals. We were careful to observe anonymity of donors where requested.

**Follow-Up Sessions**

More had been planned than could be achieved in the two work sessions. Eight to ten volunteers met for ten late afternoon and early evening sessions following the workshop. These hours were spent in:

- Painting the storage shelter
- Completing the climbing structure, sanding and treating the wood with linseed oil
- Preparing a frame for suspended equipment and treating it with linseed oil
- Installing eye bolts and s-hooks for hanging tire swings, pulleys, punching bag and other equipment
- Installing climbing ropes

**On-Going Care and Maintenance**

This is a major problem. Parts of the plan have not yet been implemented. Several Kiwanis and day care center board members have continued to provide labor. We are exploring the possibility of a fraternity's adopting the center and providing maintenance and repair.

# Some Things We Learned

## Planning the Playground

The first step should involve planning for the complete site, whether it is to be achieved initially or by stages. Criteria and guidelines should be developed and agreed upon. All subsequent questions should be channeled through a committee which applies the previously established guidelines to decisions.

## Initial Considerations

**Regulations and Insurance**

Licensing regulations and other laws, both city and state, which pertain to an outdoor play area, must be considered.

The center should be protected by adequate insurance. Will such insurance cover injuries to individuals working on the site?

**Budget and Resources**

What funds will be available for primary development? Where will priorities be placed? Will there be funds for future additions and for maintenance?

**Labor**

What labor will be required? If volunteer labor is to be used, skilled assistance and technical know-how will be necessary.

How will volunteer labor be organized, directed and supervised?

## Basic Criteria

**Children**

First consideration must be to the age, size, and abilities of children who will use the area. There must be opportunities for success and challenges for each child. The maximum number of children who will use the area at any given time will determine both amount of space and number of play activities provided.

**Space and Location**

The amount of outdoor space depends on the number of children and their ages. One hundred square feet per child is an average day care licensing requirement. We feel that this is inadequate. However, space can be too large for comfortable supervision.

The play area should be close to toilets and classrooms.

If the classrooms open directly onto the play area, there can be more free choice of activity and of indoor-outdoor movement for children. This arrangement also makes for easier supervision by teachers.

The shape of the play area affects ease of supervision and the number of adults needed to provide for safety and guidance. Be sure there are no blind spots.

**Fence**

A sturdy fence is essential. It sets limits for the children and makes them feel more secure. It also frees the teacher from concern about their immediate safety.

The average 5-year-old is 3 feet, 8 inches. The fence for a pre-school group should, therefore, be at least 4 feet high. There should be no toe holes to invite climbing.

The fence should have both a single gate and a double gate for maintenance vehicles. The maintenance gate should be locked when not in use.

**Surface and Drainage**

Good drainage is essential to the maximum use of a play area. Regrade if necessary.

Variations in terrain are desirable. A hill is a major asset. Some centers have developed hills from earth excavated for a foundation. Others make artificial hills over pieces of sewer pipe.

A variety of surfaces is desirable. Those surfaces which drain and dry most quickly should be nearest the door.

**Hard surfaced area** for indoor activities which can be moved out: painting, woodworking, blocks.

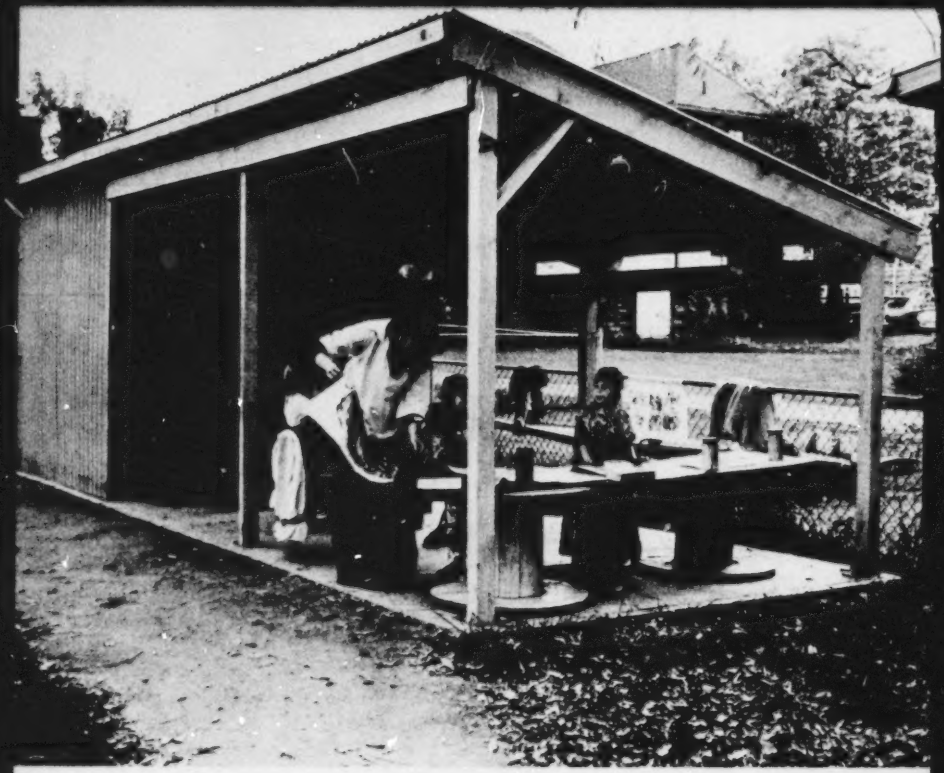
**Paved path** for wheel toys. Provide curves, hills and a tunnel for added interest. The path may also serve as an access walk.

**Grassy area** for running, rolling and general play.

**Sand area.** This will have to be confined in most localities.

**Earth area** for digging and for mud and water play. A separate area with rich soil and adequate sun should be provided for gardening.

**Tanbark** is very satisfactory if it can be confined within boundaries. It provides a soft, safe area under climbing equipment and has the added merit of draining and drying quickly.



**Sun and Shade**

Shade is especially important in year-round programs and in southern areas. Equipment placement should consider shade resources. If adequate shade is not provided by trees, develop shelters, raised platforms, or arbors with vines. Such structures can double as supports for certain hanging equipment.

**Storage**

Storage is essential to a creative learning area. It should be located near the activity area and planned with the convenience of adults in mind. Energy should not have to be devoted to moving items long distances. Ramps will make it easier for children to ride wheel toys directly into storage.

A shed, specifically designed for storage is ideal. It should include shelves, hooks and bins for small equipment. Sometimes it can double as a play area. If the roof is sturdy enough, a railing and ladder (Appendix D) will provide an additional valuable play possibility.

Storage boxes of marine plywood 3 x 8 x 3 feet with slightly sloped tops and front opening doors are excellent. These can house wheel toys, hollow blocks, and many small items. They can have the added advantage of being located in areas where their particular contents will be used.

**Play Opportunities**

The value of the play area to children depends on the number and variety of activities provided.

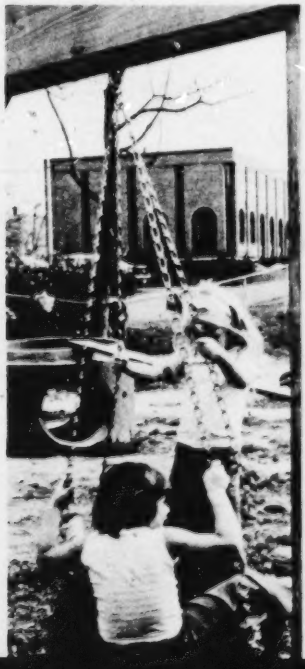
Children select those activities which have meaning and purpose for themselves. They work at their own ability levels. If they are to have free choice, there must be many more play opportunities than children. There should, therefore, be at least twice as many play opportunities as there will be children using the area at any given time.

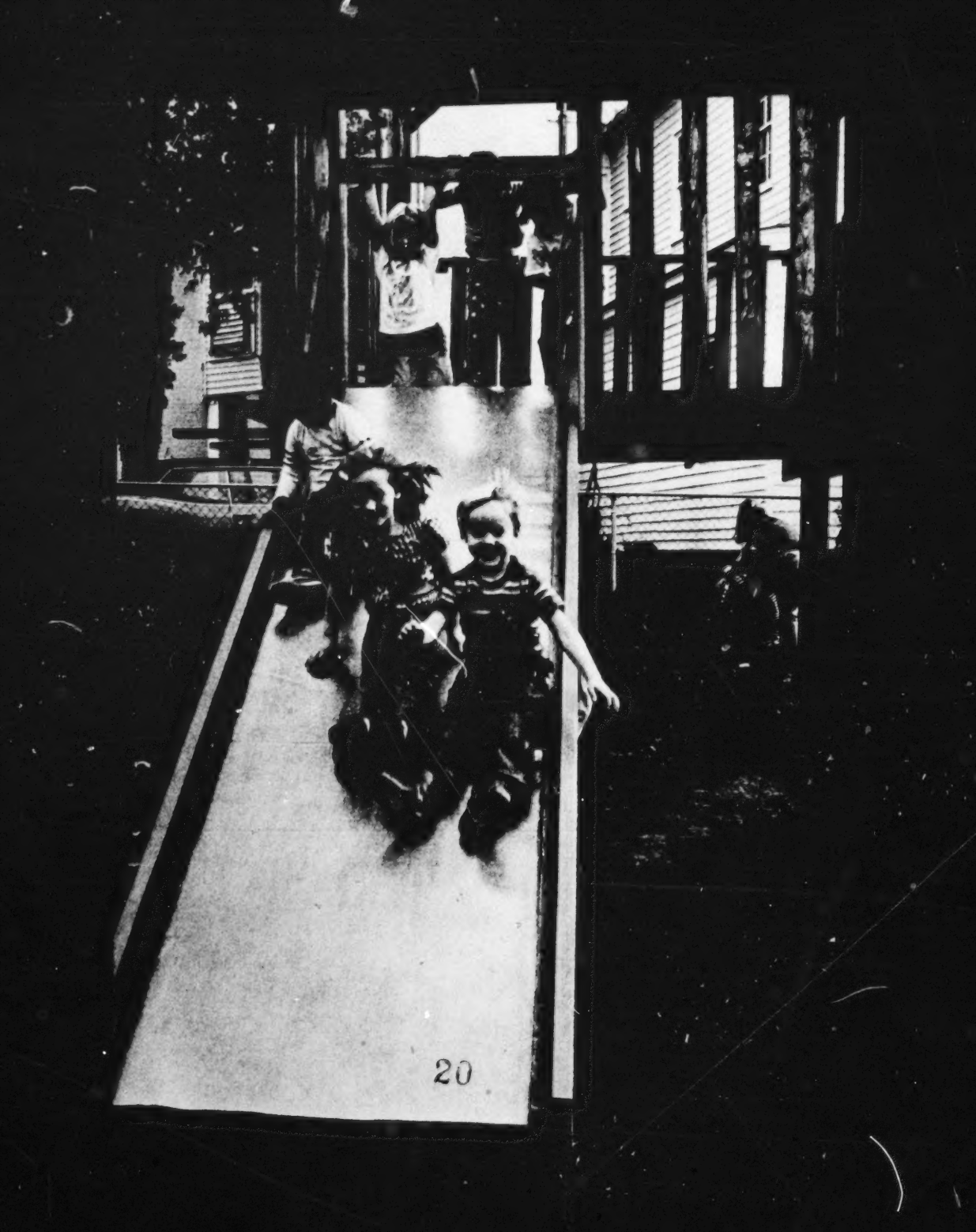
**Variety**

Provisions should be made for motor activity, for dramatic play, for exploration and discovery learning, for building and creating, and for simple games. Within each of these areas there should be variety. Playground developers often concentrate on equipment for swinging and climbing. These provide for only two kinds of motor activity. There are many other needs.

Plans must also include opportunities for a range of skill levels. A child who has mastered walking on a flat surface will be challenged by walking on a raised board, up and down an inclined plane or a hill, or over different surfaces. Water play will progress from simple pouring to the development of complex arrangements of pipes and pumps or to measurement activities if appropriate materials and guidance are available.

As motor skills are perfected, children incorporate the equipment into other types of play — particularly dramatic play. Flexibility of equipment and space for combining and recombining moveable equipment should be considered at the planning stage.





**Equipment Arrangement**

Plot your yard plan on a scale drawing (Appendix A) with consideration to the following:

1. Wheel toy traffic patterns and access walk ways should be clearly defined. They should not be too close to play equipment.
2. Provide for open areas for running, rolling, balls and moveable equipment.
3. Group active apparatus and arrange it so that an adult can see the total area and move quickly to any piece.
4. Allow adequate space around equipment for the activity taking place (for example, to move from the slide around to the ladder) and for children to move safely from one activity to another.
5. Separate quiet and active areas.
6. Plan to utilize sun and shade areas appropriately.
7. Place quiet activities, such as sand play, where they will be sheltered from the wind in winter and sun in summer.

**Water**

There should be a convenient source of water. Location of water outlets will affect placement of sand, earth, gardening and sheltered areas. An outdoor drinking fountain at children's height eliminates many problems.

# Teaching In The Outdoor Learning Center

Even the best planned and most carefully equipped area has limited value unless the teaching staff is committed to the concept of outdoor learning. Children need teachers who are attuned to the value of outdoor play. They need teachers who are willing to make the effort that it takes to provide for good play. Most of all, they need teachers who have the skills to supervise, enhance and extend the play so that the greatest possible learning accrues from it.

**Collect Accessory Materials**

A play area can be relatively rich in pieces of equipment, yet fail to hold children's interest or help them sustain their involvement. A sand area alone will invite walking through, digging with hands, sifting through fingers. Sand tools and containers add a new level of involvement — pouring, sifting, measuring or, perhaps, dramatic play. If water is added, there is new complexity. The sand can be molded; tunnels, buildings and roads can be constructed; even dams and streams can be developed.

It is with the extra materials — salvaged junk, contributions, or inexpensive finds — that teachers truly enrich the learning potential of outdoor play.

These suggestions will help. You will think of many more.

**Physical Play**

balls
ropes
ladders
boards
tires
wire cable spools
pulleys
boxes

**Dramatic Play**

hats and dress up clothes
props for various occupations:
painters' hats, cans, brushes;
mechanics' clothes, tools, parts of automobiles
old blankets, sheets, canvas, cloth
traffic signs

**Digging and Gardening**

garden tools
(lightweight; don't even cut off handles if you have adequate supervision)
hand tools
stakes
string
wheelbarrows and wagons
cans, containers
watering cans
hose
seeds, bulbs
fertilizer, mulch
tires

**Sand Play**

cans in variety of sizes
(paint for durability; punch holes of a variety of sizes in some)
sifters and sieves
spoons, sugar scoops
cooking utensils
rolling pins, cookie cutters, molds
plastic boxes, containers, bottles
whisk brooms for brushing off excess sand

**Animals**

pet cage and/or pen
insect cages
collars, leashes

**Water Play**

pans, cooking utensils
plastic bottles, containers
soap, food color, crepe paper
egg beaters, basters
measuring containers (spoons, plastic cups, milk containers, all sizes)
hoses
transparent plastic tubing
plastic pumps, pump sprayers
materials to float

**Science**

magnifying glasses
containers for collections

**Woodworking and Construction**

work table, vice
c-clamps
saws, hammers, other tools
tool storage
wood scraps
nails
junk accessories—
bottle caps, pieces of inner tube, cloth scraps, string, rubber bands, spools
blocks
boards
tires
cloth and canvas

**Determine Limits**

If all the adults consistently set and enforce the same limits, the children come to accept these and live within them. It is helpful if the adults decide, in a staff meeting, what the general limits will be and how they will be defined to the children.

**Prepare the Environment**

Set up the playground each day as carefully as you do the indoor area. Think through what the children did the preceeding day. What needs to be left as it was yesterday? What novelty should be introduced in arrangement, equipment, materials and activities?

Make provisions daily for each type of activity: physical play, dramatic play, creative activity, construction, exploration and discovery.

Plan for the space use and arrange a portion of the equipment before the children arrive. The children can help in the arrangement of some portable equipment. They should also be free to rearrange it later to suit their purposes.

Set out accessories so that they cue the children to the possibilities for use — e.g. display sand containers and tools beside the sand box, along with a container of water or a hose; place spades and hoes in the digging area.

**Supervise and Interact**

Outdoor time is not a period for teachers to rest or to talk together. It is active teaching time. It requires that teachers be alert, interested, and involved.

If more than one adult is in the outdoor area there should be a plan for cooperative supervision. This might include the assignment of one person to over-all supervision of the area while others provide closer guidance for certain assigned areas or activities.

Stay aware of the activities of the total group, even when you are working intensely with one group or individual.

Learn to foresee consequences. Provide guidance that forestalls difficulties.

Children need help in working out problems with each other and with r aterials, just as they do indoors. Know what is happening. Then provide appropriate help in only the amount the children need to reach satisfactory solutions.

Be alert to opportunities to add materials, ask a question, make a suggestion, or rearrange equipment in ways that will enable children to take the play further. For example, supply small cars for use in the sand roads and tunnels; provide a length of rope for the child who is trying to connect the wagon to a tricycle; place ladders near the "fireman"; or bring out a magnifying glass for the children who have discovered a worm.

*Provide support by moving near the child who is not yet sure of himself* on a piece of apparatus. Again, give only the necessary help. Let the child experience the satisfaction of his own achievement when he crosses the board or comes down the slide.

Talk with children about their activities and share their pleasure in them. They don't want too much help; they do want you to be aware of them and of what they are doing.

**Dress for the Role**

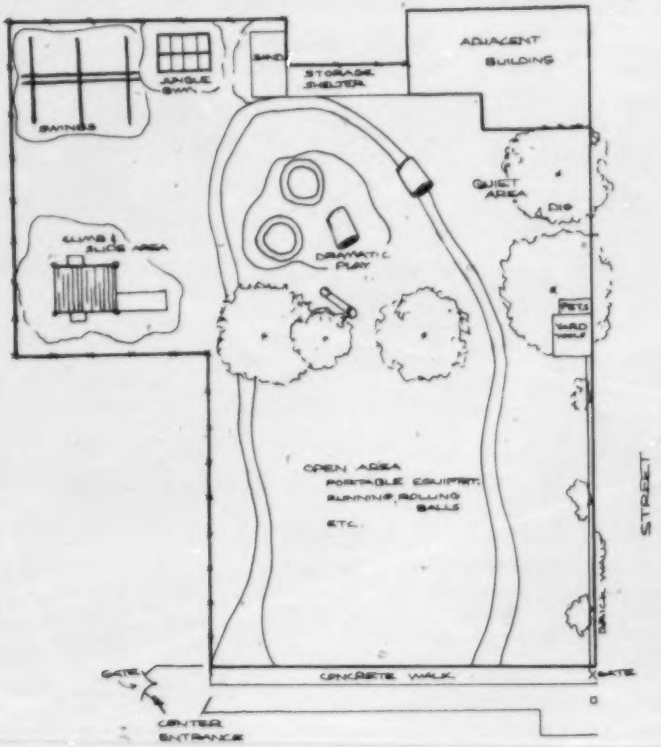
Children should play outdoors in most weather conditions. They learn about seasons and weather changes through experiencing them. They should not be deprived because adults are uncomfortable from cold or dislike experiences with snow, mud, puddles, and gentle warm rains.

The teacher needs to come to school prepared to be outdoors. Warm slacks, coat, gloves or mittens, head covering and boots are an important part of her wardrobe — as they are of the children's.

Teachers are models — of appropriate dress, of pleasure in the weather, and, most of all, of joy in living and learning together in the outdoor center.

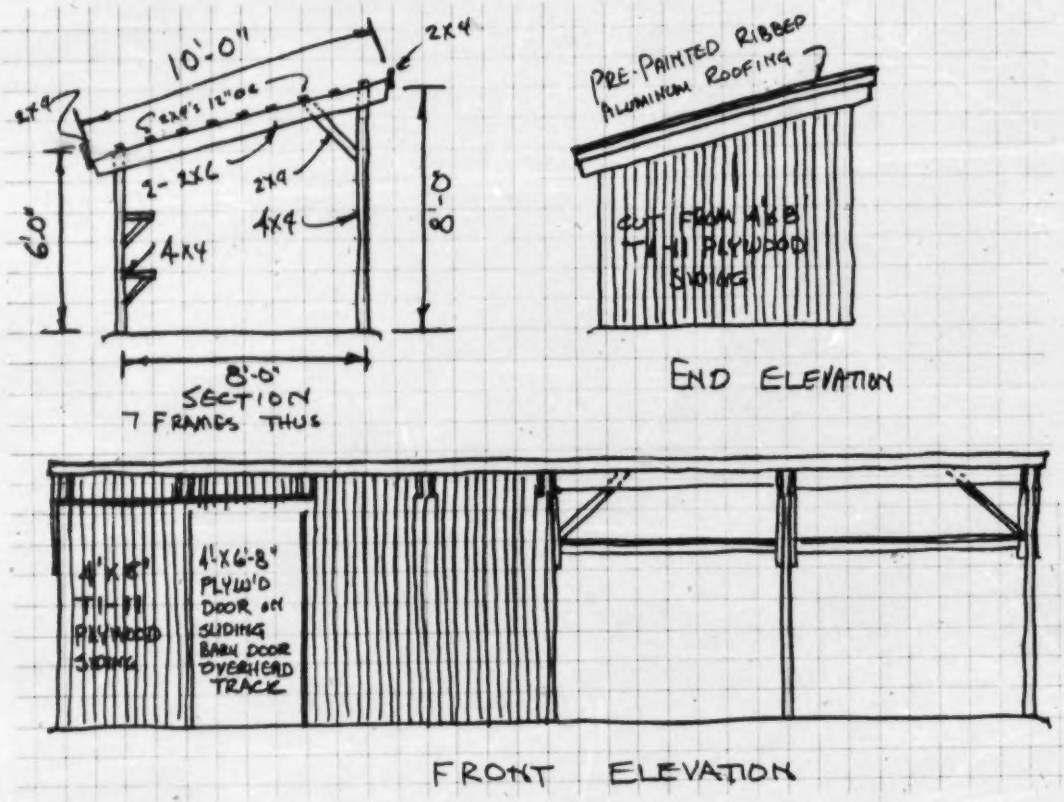
# Appendix A
## Outdoor Area Plan

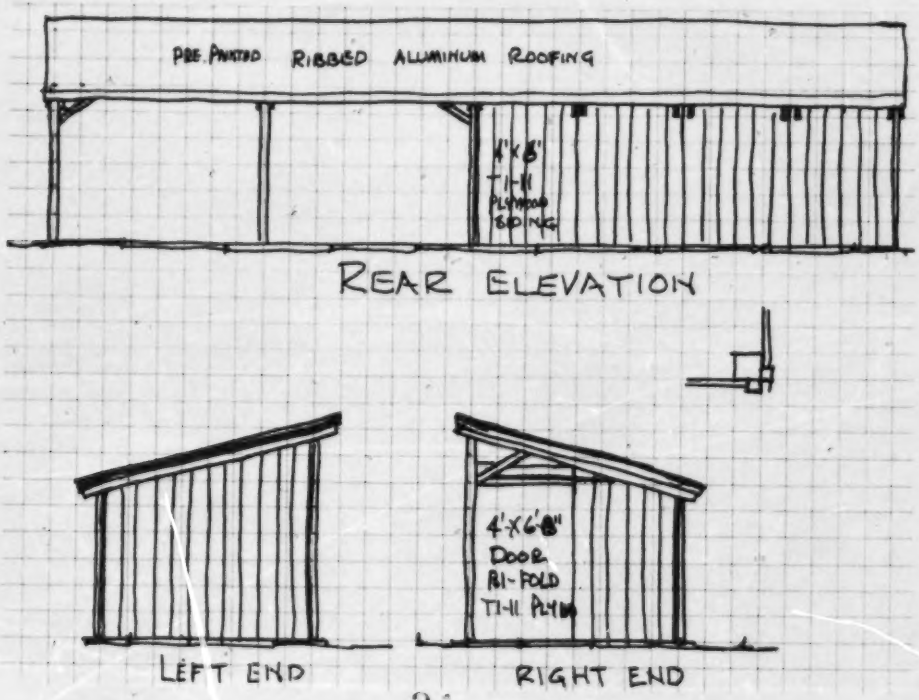

## Appendix A
Outdoor Area Plan

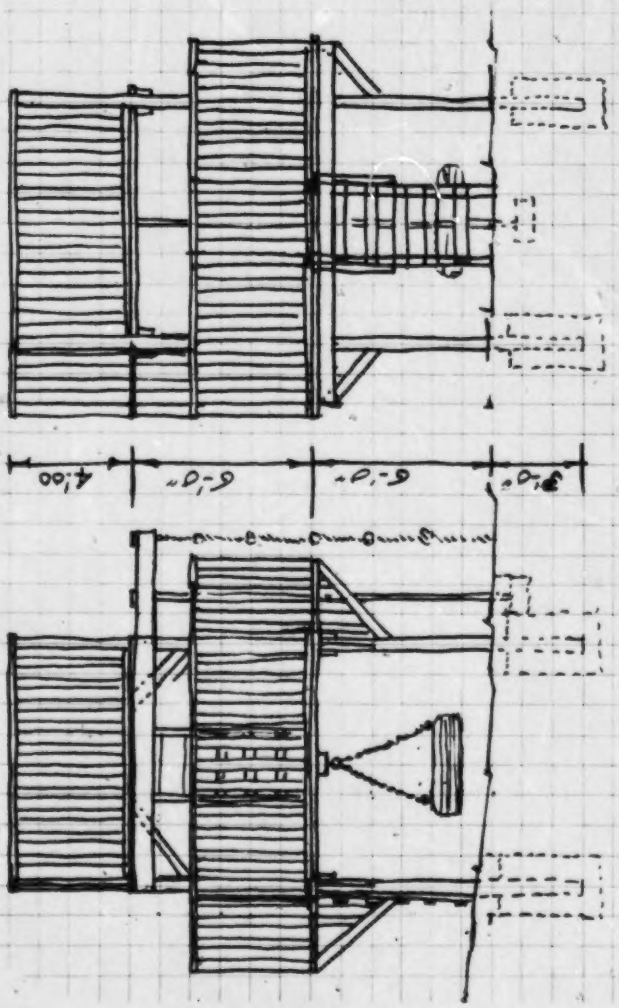

HARRISONBURG - ROCKINGHAM COUNTY
CHILD DAY CARE CENTER

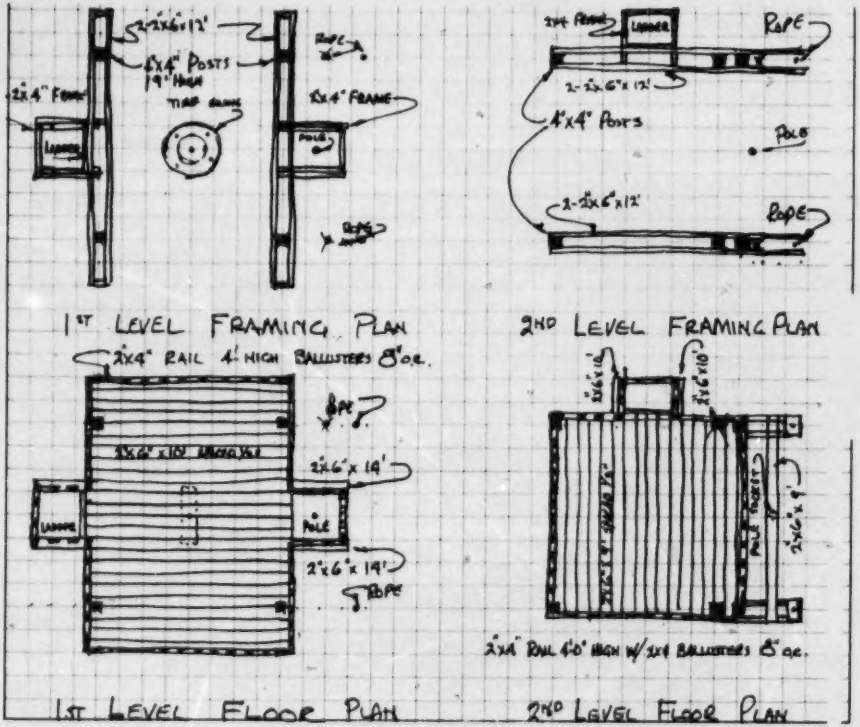
21


10'-0"
2X4
2X4
5 2X8's 12" OC
2- 2X6
2X4
4X4
4X4
6'0"
8'-0
8'-0"
SECTION
7 FRAMES THUS
PRE-PAINTED RIBBED
ALUMINUM ROOFING
CUT FROM 4'X8'
T1-11 PLYWOOD
SIDING
END ELEVATION
4'X8'
T1-11
PLYWOOD
SIDING
4'-X6'-8"
PLYW'D
DOOR ON
SLIDING
BARN DOOR
OVERHEAD
TRACK
FRONT ELEVATION


PRE-PAINTED RIBBED ALUMINUM ROOFING
4'X8' T1-11 PLYWOOD SIDING
REAR ELEVATION
4'X6'8" DOOR BI-FOLD T1-11 PLYW
LEFT END
RIGHT END

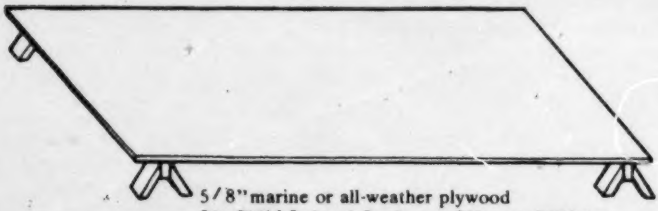
## Appendix C
### Climbing Structure Design



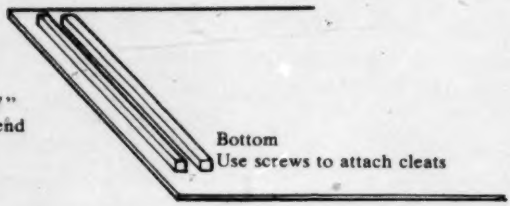

2-2x6x12'
4x4" Posts
19" High
2x4" Frame
2x4" Rail
Ladder
Pole
Rope
1st Level Framing Plan
2x4" Rail 4' High Ballisters 8" o.c.
2x6" x 19'
2x6" x 19'
Rope
1st Level Floor Plan
2nd Level Framing Plan
2x6" x 10'
2x6" x 10'
2x6" x 4'
2x4" Rail 4'0" High w/ 2x4 Ballisters 8" o.c.
2nd Level Floor Plan

# Appendix D

## Jumping Board



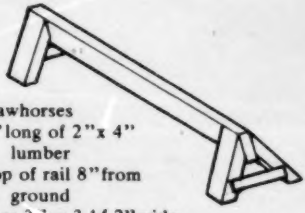
5/8" marine or all-weather plywood
2'x 8' (1/ 2 sheet) Sawhorses 2' long x 8" high



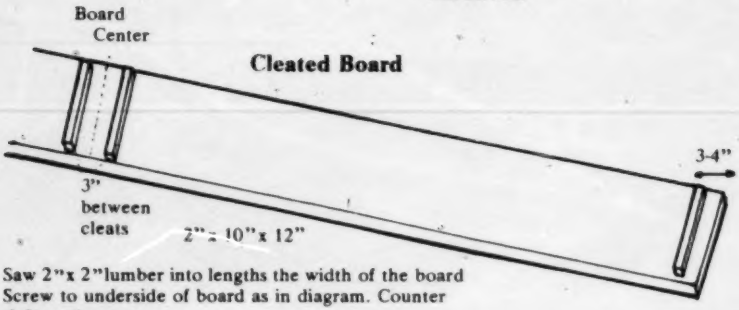
4 cleats 2"x 2"x 17"
placed 2 at each end

Bottom
Use screws to attach cleats

Alternate: Cleat together two 10'x 1"x 10" ash boards
Use on sawhorses 10-12" from the ground



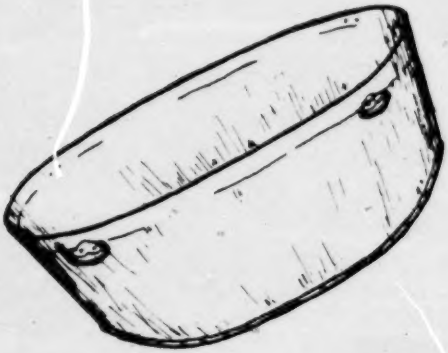
Sawhorses
2' long of 2"x 4" lumber
top of rail 8" from ground
legs 3 or 3 1/ 2" wide
braced. Put together with screws.



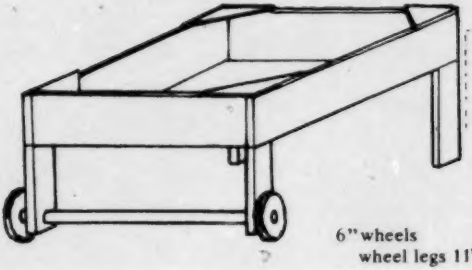

**Cleated Board**

Saw 2"x 2" lumber into lengths the width of the board
Screw to underside of board as in diagram. Counter sink screws.
End cleats hold board firmly over sawhorses, climbing boxes, etc.
Center cleats provide for use as a seesaw over sawhorse. Cleat both ends. Sand. Paint.

## Portable Water Play Table



Large oval
laundry tub



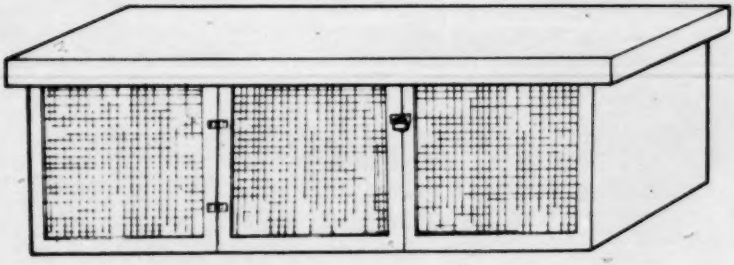
Plywood traingles to
fit tightly against
tub

12"

Frame 2" x 6" lumber
Legs 2" x 4" lumber

6" wheels
wheel legs 11" long

40" x 19"

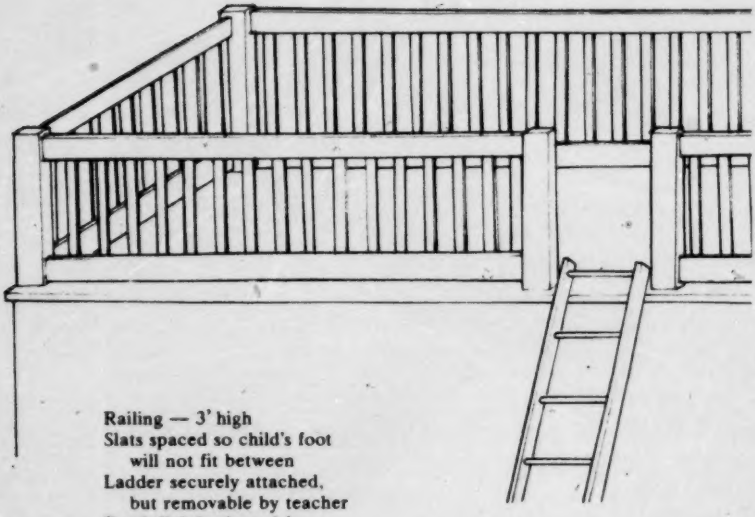


## Pet Pen

35

## Appendix D (Continued)

### Roof Balcony for Sturdy Storage Shed



Railing — 3' high
Slats spaced so child's foot will not fit between
Ladder securely attached, but removable by teacher
Roof slightly slanted for drainage

## Appendix E

### Finishing Concrete Equipment

**Smoothing**

Smooth rough spots with a Carborundum stone. A broken piece of concrete also works well for this purpose.

**Patching**

Mix together: one part Flamingo mortar mix, three parts sand, and water (add in small amounts) to desired consistency. Apply with trowel, smoothing carefully.

**Preparing Masonry for Paint**

Mix together to paint consistency: Flamingo mortar mix and water. Apply with masonry brush. Mixture seals so that large quantities of paint will not be absorbed into concrete.

**Painting**

It is not necessary to paint concrete. We have found, however, that enamel makes the surface much smoother—less wearing on skin and clothing.

Our best results have been obtained by first painting with a coat of masonry paint.

Masonry paint cannot be obtained in bright colors and is not highly soil resistant. Outdoor enamel is more satisfactory for final coat of paint and for future repainting.

**Caution**

Wash mortar off skin if it comes in contact.

## Appendix F

### Selected Resources

**Slide Narratives**

"Developing the Outdoor Learning Area." The thirty-minute slide and tape narration was developed as a part of this project. It establishes criteria for the outdoor area, describes the work activity, and illustrates the equipment developed in the project. It is a particularly useful supplement to this publication for a group planning a playground workshop. The program can be borrowed for a three-day period for the cost of two-way, insured mailing. Contact:

Mrs. Mildred Dickerson, Coordinator, Early Childhood Education Program, Madison College, Harrisonburg, Virginia 22801. Telephone (703) 433-6255.

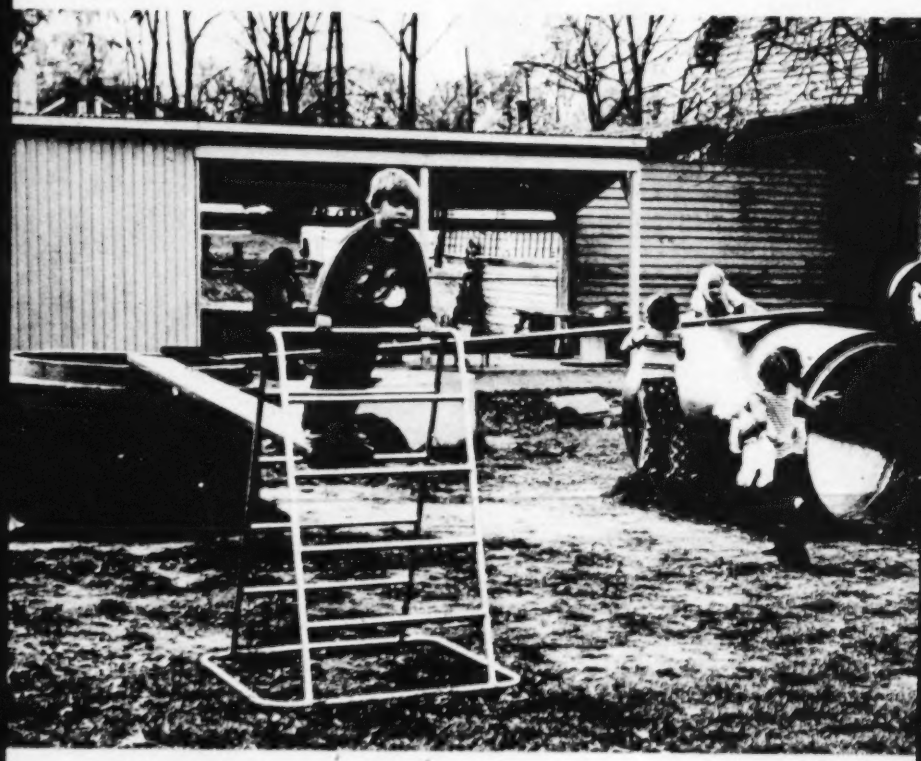
"Free and Inexpensive Additions to Outdoor Play Equipment." This is an excellent resource for stimulating groups to discover inexpensive materials from which valuable play activities can be developed. Purchase price $54.00. Childhood Resources, 4105 North Fairfax Drive, Arlington, Virginia.

**Films**

"Outdoor Play—A Motivating Force for Learning." This film demonstrates extensive use of improvised materials and shows children interacting with them in exploration of space, experimentation with balance, development of coordination and body awareness. Length 17 minutes. Rental Fee $20.00. Purchase Price $200.00.

"Concept Development In Outdoor Play." This film shows children developing concepts related to science, social studies, mathematics, and the creative arts as they engage in a variety of activities in the outdoor setting. Length 17 minutes. Rental Fee $20.00. Purchase Price $215.00.

**Films available from Campus Film Distributors Corporation, 2 Overhill Road, Scarsdale, N. Y. 10583.**



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